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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,825	07/11/2001	Robert E. Duthie JR.	35553.0000	1397

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EXAMINER

MCKANE, ELIZABETH L

ART UNIT

PAPER NUMBER

1744

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/903,825	Applicant(s) DUTHIE, ROBERT E.	
	Examiner Leigh McKane	Art Unit 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 23 November 2004.

2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-10 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

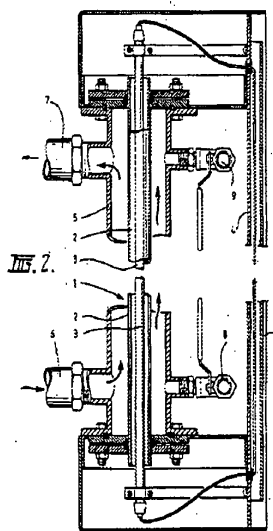
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (U.S. Patent No. 4,963,750) in view of Duthie, Jr. (U.S. Patent No. 5,547,635).

Wilson teaches an apparatus for the sterilization of fluids wherein the



apparatus includes ultraviolet lamp 3 within enclosure 2 and a vessel 5 containing the lamp and enclosure, wherein the vessel has a fluid inlet 6 and fluid outlet 7, located at opposite ends of the vessel. As shown in Figure 2, the diameter of the vessel 5 is about twice the diameter of the enclosure 2, and the diameter of the enclosure 2 is about twice the diameter of the lamp 3. Wilson does not teach that the lamp is a mercury/gallium metal halide lamp or

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that its envelope is an ozone-free metallic doped quartz envelope.

Duthie, Jr. discloses a mercury/gallium metal halide UV lamp which emits UV radiation in the range of 175-400 nm. See col.2, lines 40-50. The lamp is housed within a titanium-doped quartz tubing “of the type which transmits little or no radiation below 200 nanometers, i.e. ozone-free quartz” (col.6, lines 7-10). Duthie, Jr. further teaches that the lamp may be constructed in the form of a straight tube and is suitable for fluid sterilization. See col.6, lines 13-18. As Duthie, Jr. discloses that the ozone-free mercury/gallium metal halide lamp provides a dynamic sterilization not provided by ordinary UV lamps and in fact, “is capable of penetrating and causing excitation of molecules on the surface, therefore not requiring the amount of energy commonly associated with traditional ultraviolet methods....” See col.4, lines 38-65. For this reason, along with the others set forth by Duthie, Jr. in col.4, lines 38-65, it would have been obvious to substitute the UV lamp of Duthie, Jr. for that of Wilson.

Response to Arguments

4. Applicant's arguments filed November 23, 2004 have been fully considered but they are not persuasive.

5. Applicant argues that in contrast with the present invention, Wilson discloses an apparatus for sterilization of fluids, not for disinfection/pasteurization of fluids. As is known in the art, sterilization relates to the complete destruction of all microorganisms, including spores. Disinfection achieves the destruction or inactivation of the growing forms of microorganisms, but not necessarily spores. Thus, the apparatus and method of Wilson achieve a higher level of microorganism destruction than the present invention.

With respect to apparatus claims 1-6, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987). Therefore, as Applicant has provided no evidence to the contrary, the Examiner must take the position that the apparatus of the combination (Wilson *in view of* Duthie, Jr.), having the same structure as that claimed, is capable of achieving a *lower* level of pathogen reduction (disinfection/pasteurization) than that expressly taught by Wilson alone. This lower level of pathogen reduction can be achieved through increased flow rate of lower UV intensity, known result effective variables.

Moreover, with respect to method claims 7-10, it would appear that Applicant's arguments are directed to Wilson alone, as opposed to the combination of Wilson with Duthie, Jr., as used in the rejection *supra*. As the combination results in the identical apparatus, the method of treating fluid would have resulted in a lower kill rate.

Furthermore, although Wilson does indeed disclose that quartz envelopes are susceptible to build-up, the teaching of Duthie, Jr. that the ozone-free mercury/gallium metal halide lamp provides a dynamic sterilization not provided by ordinary UV lamps and in fact, "is capable of penetrating and causing excitation of molecules on the surface, therefore not requiring the amount of energy commonly associated with traditional ultraviolet methods..." would far outweigh any problems associated with build-up.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Wednesday (7:15 am-4:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Warden can be reached on 571-272-1275. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leigh McKane
Primary Examiner
Art Unit 1744

elm
31 January 2005